Docket No. AMDP771US H1310

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re **PATENT** application of:

Applicant:	Prasad P. Padiyar et al.
Application No.:	10/701,092
For:	DYNAMIC INTER PACKET GAP GENERATION SYSTEM AND METHOD
Filing Date:	November 4, 2003
Examiner:	Mohammad Sajid Adhami
Art Unit:	2416

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Applicants submit this brief in connection with the appeal of the above-identified case.

I. Real Party in Interest (37 C.F.R. § 41.37(c)(1)(i))

The real party in interest in the present appeal is Advanced Micro Devices, Inc. (AMD)

II. Related Appeals and Interferences (37 C.F.R. § 41.37(c)(1)(ii))

Appellant, appellant's legal representatives, and/or the assignee of the present application are unaware of any appeals or interferences which will directly affect, or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. Status of Claims (37 C.F.R. § 41.37(c)(1)(iii))

Claims 1-22 are pending in the application and are all rejected. The rejection of claims 1-22 is appealed.

IV. Status of Amendments (37 C.F.R. § 41.37(c)(1)(iv))

Claim 5 was amended after the Final Rejection dated May 29, 2008, to address a formality issue concerning Section 112, second paragraph. This claim (along with claims 3, 9 and 22) were previously amended to remove the term "about"; however, a second "about" was inadvertently overlooked by the previous amendment to claim 5. Claim 5 was amended to remove the term "about," which is consistent with the previous amendment and would not change the scope of the claim. However, this amendment was not entered, as the Advisory Action dated August 14, 2008 inexplicably stated that a new search for prior art would be required. Section VIII of this Appeal Brief contains the claim 5 as entered, i.e., without the requested amendment to remove "about."

V. Summary of Claimed Subject Matter (37 C.F.R. § 41.37(c)(1)(v))

According to the invention of independent claim 1 and referring generally to Figs. 1-4, a network station (*see e.g.*, Fig. 1, 104 and page 7, lines 23-26) is provided comprising a network device (302) having a collision counter (304) that tracks collisions, for example, which may occur where two or more nodes in a network attempt to transmit data simultaneously (*see* page 3, lines 28-29). The network station further comprises an inter packet gap (IPG) unit (306) that is configured to be programmed with dynamically generated IPG values. IPGs are intervals between data transmissions that can be employed after recovering from network collisions (*see* page 4, lines 11-13), and IPG values can be programmed into the IPG unit, for example, which have been generated to meet network conditions. The network station further comprises a dynamic IPG determiner (316) that obtains collision counts from the collision counter, and dynamically generates an IPG value that is a function of the collision counts and programmable parameters.

Still referring to independent claim 1, programmable parameters, which can be modified by a network coordinator (406) (*see* page 4, lines 21-24, page 14, lines 18-27), include one or more of the following: a range of IPG values, such as those identified during collision tracking (*see* page 100, lines 26-33); a convergence time, such as a time period during which the dynamic IPG determiner looks for a new IPG value (e.g., having a lowest number of collisions) (*see* page 12, lines 18-21); and a stable state time, such as a period for which an IPG value remains programmed in the network device without modification (*see* page 15, lines 29-31). The dynamic IPG determiner also programs the inter packet gap unit with the dynamically generated IPG value (*see, e.g.,* page 13, lines 8-12, and Fig. 3).

Further, in accordance with the invention of claim 3, depending on claim 2, the dynamic IPG determiner (316) in the network station (104) periodically generates the IPG value after a one second steady state time period, such as a period of time that an IPG value remains in the inter packet gap unit (306) while it is being used for network collision recovery (*see* page 13, lines 15-19).

In addition, in accordance with the invention of claim 8, the dynamically generated IPG value, generated by the dynamic IPG determiner (316) of the network station (104), is a function of each of: an IPG range, a step value, a convergence time, and a stable state time. The invention of claim 8 utilizes each of the "programmable parameters" from claim 1 to generate a dynamically generated IPG value, instead of merely one or more of these parameters, as in claim 1.

In accordance with the invention of claim 10 and referring generally to Figs. 1-4, a plurality of networked stations (104), such as nodes that are computer or processor based systems that send and receive data according to one or more network protocols. One or more networked stations (104) are connected by a network medium (102), which may be a combination of network types including wireless, wired, cellular, and the like (*see e.g.,* page 7, lines 21-29, and Fig. 1). One or more of the networked stations (104) dynamically generate IPG values based on tracked collision counts (*see* page 8, lines 1-7, and page 10, lines 22-23, and Fig. 2) and programmable parameters wherein the

programmable parameters include one or more of the following: a range of IPG values; a convergence time; and a stable state time (*see infra*).

In accordance with the invention of claim 13 and referring generally to Figs. 5-7, a method is devised for dynamically generating an IPG value for a network device. The method comprises setting one or more programmable parameters, such as programming the parameters to a certain value or putting a parameter into a specified state (*see* page 17, line 10, and Fig. 7). The programmable parameters include one or more of the following: a range of IPG values; a convergence time; and a stable state time (*see infra*, and page 15, lines 21-31, and Figs. 6-7). The method further comprises dynamically determining an IPG value from the range of IPG values according to tracked collisions, such as determining an IPG value that has low collision rates (*see* page 15, lines 8-16 and Fig. 5, page 16, lines 15-30, and page 17, lines 10-26). The method further comprises programming the network device with the determined IPG value, for example, by updating the network device with a newly determined dynamic IPG value (*see* page 14, lines 14-16 and Fig. 5, page 16, lines 23-24 and Fig. 6, and page 17, lines 14-15 and Fig. 7).

Further, in accordance with the invention of claim 17, the programmable parameters of claim 1 further include each of a step value, a convergence time, and a stable state time. Claim 17 includes setting each one of the programmable parameters, instead of merely one or more of the parameters. Additionally, a step value parameter is included, which is a number or value of increments within the IPG range, such as incrementing a value to a next highest number by one increment in the range of numbers.

In addition, in accordance with the invention of claim 22, depending on claim 21, the method is performed after a sixty second stable state period, which is a period for which an IPG value remains programmed in the network device without modification (*see infra*). Therefore, claim 22 refers performing the method for dynamically generating an IPG value for a network device after an IPG value remains programmed in the network device without modification for a sixty second period.

VI. Grounds of Rejection to be Reviewed on Appeal (37 C.F.R. § 41.37(c)(1)(vi))

Claims 1, 8, 10, 13 and 17 were rejected under 35 U.S.C. §102(b) as being anticipated by Ramakrishnan (US 5,418,784). The claims 2, 4, 6, 9, 11, 12 and 14-21 were also rejected as they depend on claims 1, 10 and 13, respectively.

Claims 3 and 22 were rejected under 35 U.S.C. §103(a) as being unpatentable over Ramakrishnan (US 5,418,784).

VII. Argument (37 C.F.R. § 41.37(c)(1)(vii))

A. REJECTION OF CLAIMS 1, 2, 4, 6, 8-11, and 13-21 UNDER 35 U.S.C. § 102(b)

Claims 1, 8, 10, 13 and 17 were rejected under 35 U.S.C. §102(b) as being anticipated by Ramakrishnan (US 5,418,784). The remaining claims depend on claims 1, 10 and 13, respectively. A reversal of the rejection of claims 1, 2, 4, 6, 8-11, and 13-21 is requested for at the least the following reasons.

i. Ramakrishnan does not anticipate the invention of claim 1, 10, and 13, as Ramakrishnan does not disclose a dynamic IPG determiner that generates an IPG value that is a function of programmable parameters.

Please note the following citations concerning claims rejected under 35 U.S.C. §102(b) when considering withdrawal of the rejection:

> A single prior art reference anticipates a patent claim only if it ***expressly or inherently describes each and every limitation set forth in the patent claim.*** Trintec Industries, Inc. v. Top-U.S.A. Corp., 295 F.3d 1292, 63 USPQ2d 1597 (Fed. Cir. 2002); *See* Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). ***The identical invention must be shown in as complete detail as is contained in the claim.*** Richardson v. Suzuki Motor Co., 868 F.2d 1226, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989) (emphasis added).

The invention of claims 1, 10 and 13 specifically state that a dynamic determiner generates an IPG value that is a function of a collision count **and programmable parameters**. Trintec Industries, Inc. v. Top-U.S.A. Corp., 295 F.3d 1292, 63 USPQ2d 1597 (Fed. Cir. 2002), requires a single prior art reference to expressly or inherently describe each and every limitation set forth in the patent claim in order to anticipate a patent claim. Ramakrishnan **does not "expressly or inherently describe" using programmable parameters** to generate an IPG value, therefore, because each and every limitation set forth in the patent claim is not expressly or inherently described by the reference, the reference does not anticipate the patent claims.

Further, Richardson v. Suzuki Motor Co., 868 F.2d 1226, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989), requires the identical invention to be shown in as complete detail as is contained in the claim to anticipate the claim. Here, **the identical invention, is not "shown in as complete detail"** in Ramakrishnan as contained in claims 1, 10, and 13, as **Ramakrishnan does not use programmable parameters** to generate IPG values.

The claims 1, 10 and 13 detail generating IPG values that are a function of collision counts **and programmable parameters,** which include at least one of: a range of IPG values; a convergence time; and a stable state time. On page 4, lines 21-24, the specification defines what is meant by "programmable parameters" when it states, "these multiple stations can be controlled and programmed by a network coordinator that sets programmable parameters for dynamic IPG generation of each station so as to even further improve overall network throughput." The specification is clearly defining programmable parameters as those that a network coordinator can set (program), for dynamic IPG generation, to improve network throughput and provide for differing implementation of a network. Further, on page 15, lines 21-23 (and page 17, lines 2-3), the specification states, "[t]he method employs programmable parameters so [it] can be tailored to differing implementations." Again, this reference shows that programming the parameters can be used to tailor the system, as is a common use of programmable parameters. Additionally, on page 17, lines 10-12, the specification states, "the

programmable parameters are set or programmed," further describing how the parameters are "programmed."

In contrast, the Ramakrishnan reference does not disclose or suggest **programmable parameters**, and consequently, does not include programmable parameters when generating an IPG value. In Ramakrishnan, the parameters alleged by the Final Office Action as being equivalent to the programmable parameters of the invention of claim 1, 10, and 13, ***are not programmable*** as defined by the specification. Ramakrishnan describes **automatically** selecting an IPG interval by "progressively increas[ing] the IPG interval ... until another node has successfully transmitted a packet of data" (column 6, lines 43-46). Further, Ramakrishnan "then **computes** ... the extended IPG as a linearly increasing value given by 9.6+10(N+1) μs" (column 8, lines 41-43). These teachings indicate that the IPG value as an alleged parameter is automatically generated based upon collision detection, and is not programmable as defined by the applicant's specification, as described above.

Additionally, the Final Office Action alleges that the applicant's "stable state time" programmable parameter is equivalent to Ramakrishnan's "slot time." However, the "stable state time" is defined in the applicant's specification as "a period for which IPG values obtained remains programmed in the network device without modification" (page 15, lines 29-31). For example, an IPG value having a lowest collision count is programmed as the IPG value for a network device, which remains in use by the network device for a stable state time period; after which, another dynamically generated IPG value is obtained (see summary, page 4, lines 14-17). In contrast, Ramakrishnan's "slot time" is defined as "the maximum round-trip propagation time for the network, i.e. the time to propagate a data packet from one end of the network to the other, and back" (column 1, lines 52-55). Clearly the "slot time" of the cited reference refers to a time it takes for a data to travel from one end of the network to the other and back. Therefore the "slot time" of the cited reference is not even close to a "stable state time" as claimed.

Further, the Final Office Action alleges that the applicant's "convergence time" programmable parameter is equivalent to Ramakrishnan's "time after collision." However, "convergence time" is defined in the applicant's specification as "the time period for which the dynamic determiner is permitted to obtain an improved IPG value" (page 12, lines 18-21), i.e., "the convergence time represents the time period in which the determiner looks for a new IPG value having a lowest number of collisions" (page 12, lines 19-21). In contrast, Ramakrishnan refers to a "time after collision," which is merely a time period after a collision. The "convergence time" programmable parameter has nothing to do with a time after collisions, merely a time period between identifying a new IPG value. Therefore the "time after collision" of the cited reference is not a "convergence time" as claimed.

Additionally, the examiner notes that "although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims." However, the applicant's are not asking for limitations to be read in the claims; rather, applicants merely request that the specification be employed to interpret what is meant by a word or phrase in a claim. "Where an explicit definition is provided by the applicant for a term, that definition will control interpretation of the term as it is used in the claim." Toro Co. v. White Consolidated Industries Inc., 199 F.3d 1295, 1301, 53 USPQ2d 1065, 1069 (Fed. Cir. 1999). Terms found in the applicants' claims are explicitly defined in the specification, as described above, in order to avoid confusion to those skilled in the art (*see* MPEP §§ 2111.01 and 2173.01).

As described above, **the alleged Ramakrishnan parameters are not programmable parameters as defined by the applicant's specification**. Therefore, the Ramakrishnan reference does not use the programmable parameters as described in claims 1, 10 and 13 to modify the function when generating an IPG value.

Therefore, Ramakrishnan does not disclose all aspects set forth in claims 1, 10, and 13. Accordingly, a reversal of the rejection of claims 1, 10, 13 and their respective dependent claims is respectfully requested.

ii. Ramakrishnan does not disclose or suggest using a convergence time, or a stable state time, for generating IPG values, as set forth in claims 8 and 17.

The invention of claims 8 and 17 state that a dynamically generated IPG value is a function of an IPG range, a step value, a convergence time, ***and*** a stable state time. The language of these claims provides that the dynamically generated IPG value is a function of all of the limitations described. In contrast, as described above, **Ramakrishnan does not "expressly or inherently describe" using either a convergence time, or a stable state time** for these functions. Further, **the identical invention is not "shown in as complete detail"** in Ramakrishnan, as contained in claims 8 and 17.

It was alleged by the Final Office Action that, because the formula in Ramakrishnan calculates IPG values, this is analogous. However, the Ramakrishnan formula merely includes an IPG range, a step value and does not include parameters for both a convergence time, and a stable state time as in the claims 8 and 17 (see Ramakrishnan, column 8, lines 38-45). The Final Office action alleges that the applicant's "stable state time" programmable parameter is equivalent to Ramakrishnan's "slot time;" and that the applicant's "convergence time" programmable parameter is equivalent to Ramakrishnan's "time after collision." However, as described above, these programmable parameters are not equivalent. Therefore, because Ramakrishnan does not disclose all aspects set forth in claims 8 and 17, we respectfully request reversal of the rejection of claims 8 and 17.

B. REJECTION OF CLAIMS 3 and 22 UNDER 35 U.S.C. § 103(a)

Claims 3 and 22 were rejected under 35 U.S.C. §103(a) as being unpatentable over Ramakrishnan. A reversal of the rejection of claims 3 and 22 is requested for at the least the following reasons.

As discussed above, **we do not concede that Ramakrishnan meets all the limitations of the parent claims**.

The Final Office Action alleges that the steady state time in these claims, is equivalent to Ramakrishnan's "time between detected collisions." The applicant's steady state time is defined in the specification as a period of time that an IPG value remains in the inter packet gap unit while it is being used for network collision recovery (*see* page 13, lines 15-19). In contrast, Ramakrishnan's "time between detected collisions" is merely a time period between detection of collisions. The applicants steady state time is not determined or related to a time period between detection of collisions, merely a time period in which an IPG value remains in the inter packet gap unit while it is being used for network collision recovery. Therefore the "time between detected collisions" of the cited reference is not a "steady state time" as claimed in claim 3 and 22. Therefore, there is no 35 U.S.C. §103(a) basis for rejection of claims 3 and 22 as alleged by the Final Office Action, and reversal of the rejection of claims 3 and 22 is respectfully requested.

C. CONCLUSION

For at least the above reasons, the claims currently under consideration are believed to be patentable over the cited references. Accordingly, it is respectfully requested that the rejections of the pending claims be reversed.

For any extra fees or any underpayment of fees for filing of this Brief, the Commissioner is hereby authorized to charge the Deposit Account Number 50-1733, AMDP771US.

Respectfully submitted,
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VIII. Claims Appendix (37 C.F.R. § 41.37(c)(1)(viii))

1. (Previously Presented) A network station comprising:

a network device having a collision counter that tracks collisions and an inter packet gap unit that is programmable; and

a dynamic IPG determiner that obtains collision counts from the collision counter, dynamically generates an IPG value that is a function of the collision counts and programmable parameters, wherein the programmable parameters include at least one of:

a range of IPG values;

a convergence time; and

a stable state time, and

programs the inter packet gap unit with the dynamically generated IPG value.

2. (Original) The station of claim 1, wherein the dynamic IPG determiner periodically generates the IPG value after a steady state time period.

3. (Previously Presented) The station of claim 2, wherein the steady state time period is 1 second.

4. (Original) The station of claim 1, wherein the dynamic IPG determiner generates the IPG value by testing a plurality of IPG values and evaluating a number of collisions for each of the IPG values.

5. (Previously Presented) The station of claim 4, wherein the range of IPG values is from 96 bit times to about 272 bit times.

6. (Original) The station of claim 4, further comprising a storage unit that maintains collision counts associated with tested IPG values.

7. (Original) The station of claim 6, wherein the dynamic IPG determiner and the storage unit are components of a device driver.

8. (Original) The station of claim 1, wherein the dynamically generated IPG value is a function of an IPG range, a step value, a convergence time, and a stable state time.

9. (Previously Presented) The station of claim 1, wherein the network device is operable to transmit and receive data at 100 Mbps in half duplex mode.

10. (Previously Presented) A network system comprising:

a plurality of networked stations wherein one or more of the stations dynamically generate IPG values according to tracked collision counts and programmable parameters, wherein the programmable parameters include at least one of:

a range of IPG values;

a convergence time; and

a stable state time; and

a network medium that connects the one or more stations.

11. (Original) The system of claim 10, wherein the programmable parameters include an IPG range and a step value.

12. (Original) The system of claim 10, further comprising a network coordinator that tracks network collisions and network throughput and dynamically modifies the programmable parameters of the one or more stations that dynamically generate IPG values to modify the network throughput to achieve a desired throughput.

13. (Previously Presented) A method of dynamically generating an IPG value for a network device comprising:

setting one or more programmable parameters, wherein the programmable parameters include at least one of:

a range of IPG values;

a convergence time; and

a stable state time;

dynamically determining an IPG value from the range of IPG values according to tracked collisions;

programming the network device with the determined IPG value.

14. (Original) The method of claim 13, wherein dynamically determining an IPG value from the range of IPG values comprises:

testing one or more IPG values of the range of IPG values;

obtaining respective collision counts for the one or more tested IPG values;

selecting the determined IPG value as being the value of the one or more tested IPG values that yielded a lowest collision count.

15. (Original) The method of claim 14, wherein testing each of the one or more IPG values comprises:

programming an IPG current value to a network device;

obtaining a current collision count over a selected period of time;

setting an IPG modified value to the IPG current value on the current collision count being less than that associated with the IPG modified value; and

incrementing the IPG current value by a step value.

16. (Original) The method of claim 15, wherein the IPG modified value is the determined IPG value.

17. (Original) The method of claim 13, wherein the programmable parameters further include a step value, a convergence time, and a stable state time.

18. (Original) The method of claim 15, wherein the current collision count is obtained from the network device.

19. (Original) The method of claim 15, wherein the IPG current value is initially 96 bit times.

20. (Original) The method of claim 15, wherein the step value is 1 bit time.

21. (Original) The method of claim 13, wherein the method is performed after a stable state period.

22. (Previously Presented) The method of claim 21, wherein the stable state period is 60 seconds.

IX. Evidence Appendix (37 C.F.R. § 41.37(c)(1)(ix))

No additional evidence not already part of the official record is relied upon in the arguments provided herein.

X. Related Proceedings Appendix (37 C.F.R. § 41.37(c)(1)(x))

Not applicable.